8.0 GROWTH INDUCEMENT AND CUMULATIVE IMPACTS

8.1 METHODOLOGY – Growth Inducement

This section assesses the potential growth-inducing impacts of the proposed SR-22/West Orange County Connection (SR-22/WOCC) project, based upon a comparison of the TSM/Expanded Bus Service, Full Build and (Enhanced) Reduced Build Alternatives to the No Build Alternative base condition.

Under both NEPA and CEQA, environmental documents must discuss the ways in which the proposed alternatives could foster economic or population growth, either directly (direct growth inducement) or indirectly (indirect growth inducement), in the area immediately adjacent to the project (local growth inducement) and in a larger area (regional growth inducement). FHWA and the California Department of Transportation (the Department) define growth inducement as the relationship between the proposed transportation project and growth within the project area.

Growth inducement can take several forms. A project can remove barriers or constraints or provide new or improved access, encouraging growth in the area that has been already planned or approved through the general planning process. This planned growth is reflected in land use plans, approved with the underlying assumption that adequate transportation facilities would be constructed. This type of growth inducement is referred to as accommodating or facilitating growth. In addition, a project can remove barriers, provide new access or otherwise encourage growth that is NOT assumed as planned growth in the general plans or growth projections. This could include areas that are currently designated for open space, agricultural uses or other similar non-urban land uses, which, because of the improved access provided by the project, would experience pressure to develop into urban uses or to develop at a higher level of intensity than originally anticipated.

The role of transportation systems in fostering and affecting land use structure has been the subject of much study, especially recently with the increased interest in “smart growth” and “sustainable development.”

8.1.1 ANALYSIS – Growth Inducement

In the short term, construction would require an approximate maximum of 13,548 employees for the (Enhanced) Reduced Build Alternative, based on the methodology outlined in FHWA’s *Summary: Economic Impacts of Federal-Aid Highway Investment* (FHWA, 2000).[1] Not all of these employees would be working at the same time. The very large labor force available in the area would easily provide for this relatively small number of employees; therefore, minimal in-migration would occur and minimal short-term direct growth would be induced.

Following construction, the increase in lanes under the (Enhanced) Reduced Build Alternatives would require a very small incremental increase in labor to maintain the facility and for law enforcement. This small increase in labor would not lead to substantial increases in the necessary labor force. Additional labor would be required for a number of the TSM measures that are part of the (Enhanced) Reduced Build Alternative, but it is likely that the existing area labor force would be sufficient for these needs and in-migration would not occur.

8.1.2 ANALYSIS – Indirect Growth Inducement

A. REGIONAL GROWTH EFFECTS

Orange County has been one of the fastest-growing areas in the state over the past 40 years.

[1] Available at the California Department of Transportation, District 12.

However, projected growth rates are expected to gradually slow from 1990 to 2020. The cities in the study area are largely built out, and most additional population and employment growth is expected to take place through redevelopment. Current projections indicate that population in the cities that make up the SR-22/WOCC study area will increase by approximately 32.7 percent between 1990 and 2020, or an average of approximately one percent per year (U.S. Department of Commerce Census 1980, 1990; Orange County, 1996). However, California State Census 2000 indicates an increase in population of 18.1% for Orange County (California Department of Finance, Demographic Research Unit, Census 2000).

Since the Full Build Alternative would provide regional connectivity of the HOV system in Orange County (and to adjacent counties), this alternative would make commuting through and into the project area more convenient. This improvement could make undeveloped areas within the outskirts of the county more attractive to development. For areas where the local general plans anticipate such growth, the Full Build Alternative could slightly hasten or at least facilitate such growth. There could also be a minor increase in pressure to develop areas that are not currently planned for development. Land use decisions rest with the local jurisdictions, however, and it is unlikely that improvements as proposed under the Full Build Alternative alone would result in enough political pressure to alter existing land use plans. In concert with other transportation system improvements, however, as well as other growth-inducing factors, the Full Build Alternative could contribute to increased pressure to revise land use plans to include more development.

The (Enhanced) Reduced Build Alternative would not be likely to substantially increase development pressures on outlying areas in Orange County, since there would be no direct HOV connectors proposed in the eastern portion of the project (at I-5 and SR-55). Thus, connection to the eastern and southern portions of the county, where the majority of undeveloped land still exists, would not be significantly improved. The minor pressure to grow at a faster pace or in areas not currently planned for development would be less under the (Enhanced) Reduced Build Alternative than under the Full Build. The elements of the TSM/Expanded Bus Service Alternative are included in the (Enhanced) Reduced Build Alternative.

B. LOCAL GROWTH EFFECTS

The SR-22/WOCC (Enhanced) Reduced Build and Full Build Alternatives are consistent with planning documents throughout the region and study area cities.

Local jurisdictions (cities and counties) have sole jurisdiction over land use and zoning. They support regional transportation plans through local implementation programs. SCAG is responsible for assisting local governments to coordinate efforts to ensure that the region's transportation projects, programs and plans conform to the Air Quality Management Plan (AQMP). Local jurisdictions provide fair-share reduction of vehicle pollution through adoption of a series of optimal Transportation Control Measures (TCMs). TCMs include such capital-based actions as HOV lanes, transit improvements and traffic flow improvements.

Local transportation-related planning decisions as well as improvements outlined in the general plan circulation elements of local cities typically recognize the related transportation needs and planning activities of the surrounding county, region and state, and provide support to these plans through implementation of transportation improvement-based goals and policies.
With projected population and employment growth trends indicating increased transportation volumes, LOS is expected to worsen. The proposed SR-22/WOCC improvements are anticipated to provide a higher level of operation for existing and projected traffic volumes, which is consistent with local and regional planning documents.

Although the improvement of transportation within the SR-22/WOCC corridor would be consistent with the growth plans of the various cities within the corridor, none of the plans require that the

elements of the proposed alternatives be completed in order to implement the plans. Therefore, the project would not be integral to this growth and would not facilitate planned growth.

The (Enhanced) Reduced Build Alternative does not propose any new interchanges, only improvements to existing ones. Thus, this alternative would not provide new access to previously inaccessible areas. Improvements to existing interchanges, especially when combined with on-going or planned improvements to the connecting surface streets, may make these areas more attractive and may increase the pressure to develop or redevelop these areas faster and/or at greater density. Areas where improved interchanges related to the (Enhanced) Reduced Build Alternative would coincide with ongoing or planned surface street improvements include:

- Seal Beach Boulevard
- Harbor Boulevard Smart Street

The Full Build Alternative would have similar growth-inducing impacts at improved interchanges as listed above for the (Enhanced) Reduced Build. In addition, the provision of an arterial directly connecting SR-22 with downtown Santa Ana, as proposed under the Full Build Alternative, would make this downtown area more attractive as a destination, especially for office and commercial uses. This increased access could encourage businesses and employers to locate in this area. This could lead to increased redevelopment pressures or pressure to increase density beyond what is currently planned. Such an impact would be growth-inducing. This arterial is not proposed under the (Enhanced) Reduced Build Alternative.

8.2 METHODOLOGY – Cumulative Impacts

The Council on Environmental Quality's (CEQ's) regulations (40 CFR 1500 – 1508) implementing NEPA defines cumulative effects as follows (CEQ, 1997):

> *The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions.*

As stated in Section 15355 of the CEQA Guidelines (OPR, June 1986):

> *"Cumulative impacts" refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.*
>
> *(a) The individual effects may be changes resulting from a single project or a number of separate projects.*
>
> *(b) The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.*

Assessment of Cumulative impacts takes into account the residual impacts of the proposed SR-22 West Orange County project, combined with the other projects in Table 8.2-1, Projects Included in Cumulative Analysis, along the entire proposed project site. Analysis of cumulative impacts starts by defining the geographic or temporal boundaries. These boundaries vary depending on the issue being analyzed. For instance, the project's contribution to a cumulative impact to an endangered species must consider the habitat or range of that species, which may be small or large. Noise impacts, however, are only cumulative as they affect individual receivers. Thus, for each of the topics below, the boundaries for analysis of cumulative impacts are separately defined. If the project alternatives would have negligible impacts or none at all, and thus would not contribute to cumulative impacts, it is so stated.

Projects that are speculative in nature were not considered in this cumulative analysis. The scope of such projects may change during the planning phase; consequently, their environmental impacts may be altered.

Cumulative impact discussions on projects in Table 8.2-1 (Projects Included in Cumulative Analysis) are based on their environmental documents, if such documents are available. The Table presents a list of projects included in the analysis below. Refer to Section 2.4 for descriptions of the projects. Not every project is included in each analysis, as discussed below.

ANALYSIS – Cumulative Impacts

8.2.1 Issues With No Contribution to Cumulative Impacts

There are several areas which would not be subject to cumulative impacts, regardless of the alternative selected for the SR-22/WOCC. This is because either they would not result in impacts or the impacts that would occur can be fully mitigated or prevented through mitigation. These areas, which are not further discussed in this section, are as follows:

- Topography (no impacts under any alternative)
- Liquefaction (impacts prevented by mitigation)
- Expansive soils (impacts prevented by mitigation)
- Erosion (impacts prevented by mitigation)
- Loss of habitat (no impacts under any alternative)
- Species of concern (no impacts under any alternative)
- Wetlands (impacts prevented by mitigation)
- Transportation/circulation (positive impacts and impacts prevented by mitigation)
- Utilities (impacts prevented by mitigation)
- Hazardous materials/wastes (impacts prevented by mitigation)
- Seismicity (impacts prevented by use of latest technology)
- Energy (no impacts under any alternatives
- Biology (minor impacts prevented by mitigation)

Table 8.2-1
PROJECTS INCLUDED IN CUMULATIVE ANALYSIS

Lead Agency	(Project)	Project Location and Description
Los Alamitos	No developments approved in the vicinity of the proposed project	No projects
Orange County (Rossmoor)	Rossmoor Pump Station and Basin Modification	**Location**: Northwest of the I-405 and I-605 interchange **Description**: Construction of a pump station and reconfiguration of the existing basins. The proposed improvements intend to provide 100-year protection along the channel segments.
Seal Beach	Old Bixby Ranch Golf Course	**Location**: Old Ranch Towne Center-adjacent and immediately east of Seal Beach Blvd., between Saint Cloud Dr. and Rossmoor Center Way. Old Ranch Business Hotel/Restaurants/Senior Care Facilities-south of Lampson Ave. and east of Seal Beach Blvd. **Description**: Old Ranch Towne Center-a 10 hectare (25-acre) commercial center including retail, parking, community police center, service station/mini-mart and restaurants. Old Ranch Business Hotel /Restaurants/Senior Care Facilities-a 5.5 hectare (13.57-acre) area designated for a hotel, parking, senior care facilities and restaurants.
	Seal Beach Boulevard Overcrossing Widening	**Location**: Seal Beach Blvd. at the I-405 Interchange **Description**: Add a median, sidewalks, bike lanes and one lane in each direction, to the existing overcrossing and roadway approaches from Beverly Manor at the I-405 southbound ramps to Old Ranch Parkway at the I-405 northbound ramps.
Westminster	No developments approved in the vicinity of the proposed project	No projects
Garden Grove	County Wide Automotive Dealership	**Location**: Southeast corner of Trask Ave. and Taft St. **Description**: Construction and operation of an automobile sales, repair and service facility on an approximately 1.3 hectare (3.2 acre) site.
Stanton	No developments approved in the vicinity of the proposed project	No projects
Santa Ana	Main Street Concourse	**Location**: Northeast corner of Main St. and Owens Dr. **Description**: Proposal to develop 18.9 acres of vacant land into residential and commercial (office, retail, restaurants, theater, hotel) land uses. The development would be constructed in two phases.
	Bristol Street Corridor Redevelopment Project	**Location**: Bristol St. from Memory Lane to Elm Street and Third Street to Pine Street. **Description**: Widen and reconstruct a 6.2-kilometer (3.9-mile) segment of Bristol St. from an undivided, four-lane arterial to a divided, six-lane major arterial.
Orange	Main Street/La Veta Avenue/Chapman Avenue	**Location**: Bound by SR-57 to the west, Orangewood Ave. to the north, Cambridge St. on the east and SR-22 to the south. **Description**: Main St.-ultimate right-of-way will range from 30 to 41 meters (100 to 135 feet). La Veta Ave.-ultimate right-of-way 24 meters (80 feet), includes widening of Glassell St. from Culver Ave. to La Veta Ave. Chapman Ave.-ultimate right-of-way ranges between 33 to34 meters (110 to 112 feet).

Table 8.2-1
PROJECTS INCLUDED IN CUMULATIVE ANALYSIS (continued)

Lead Agency	(Project)	Project Location and Description
Tustin	No developments approved in the vicinity of the proposed project	No projects
Regional Agencies	CenterLine	**Location**: The CenterLine is an 18.2 Km (11.4 miles), 16-station light rail system serving Orange County's central business area between the cities of Santa Ana, Costa Mesa, and Irvine. **Description**: The project is expected to utilize modern electric light rail technology and is estimated to be 78 percent elevated and 22 percent at street level. Alternatives for connections include the John Wayne Airport, Irvine Business Complex, the Santa Ana Civic Center, South Coast Metro retail area, and major employment and cultural centers in the City of Costa Mesa. The CenterLine will also provide critical connections with the Santa Ana Regional Transportation Center, which is a major intermodal connection with Amtrak, and a 435-mile, five county regional commuter rail system known as Metrolink. The system would have approximately 18 light-rail cars operating at peak hour frequency of one train every ten minutes. Parking facilities would be strategically located with enough spaces to meet projected demand.
	Katella Avenue Super Street	**Location**: Katella Ave. from the San Gabriel Freeway (I-605) to 300 feet east of Tustin Ave. near State Route 55. **Description**: This 20-kilometer (14.3-mile) segment super street concept applies measures such as traffic signal coordination, roadway widening, intersection improvements, on-street parking modifications, restriping and bus turnouts to add capacity, improve traffic flow and safety along the roadway.
	Santa Ana River Mainstem Project	**Location**: Santa Ana River and Santiago Creek in the counties of Orange, Riverside, and San Bernardino **Description**: This project will provide various levels of flood protection ranging from 100-year to 190-year in areas most susceptible to damages from floods. Planned improvements will also increase recreational opportunities and enhance wetlands habitat.
	Santa Ana Freeway (I-5) widening (completed)	**Location:** I-5 between SR-22 and SR-91. **Description**: Widen 13 kilometers (8.1 miles) of I-5 and reconstruct interchanges to increase capacity and reduce congestion and operational problems. This project has been completed.
	Harbor Boulevard Smart Street Feasibility Study	**Location:** Harbor Boulevard from Orangewood Avenue to Gisler Avenue. **Description:** This project will include intersection widening, mid-block widening, lane restriping, addition of travel lanes, raised medians and/or median closures, on-street parking restrictions, and bus turnouts for 7.8 miles of urban arterial highway. This project is not one of the four Smart Street facilities in Orange County planned to undergo intensive improvements.
	SR-22 West Orange County Connection Project	**Location**: The proposed SR-22/WOCC project would involve the construction of improvements in the SR-22 study area, which includes connecting freeways and arterials (13 miles), extending from I-605 to SR-55. **Description**: The State Route 22 (SR-22)/WOCC project involves transportation improvements to the SR-22 transportation corridor, as well as portions of I-405 and I-605, in Orange County.

8.2.2 Hydrology, Floodplain, and Water Quality

Approximately one-third of the SR-22 project is located above the Forebay groundwater recharge area of the Orange County groundwater basin. Although most groundwater recharge for the basin occurs as a result of water management in the Santa Ana River channel, mostly upstream from the project, some recharge occurs through rainwater and irrigation water percolating from upland areas into the underlying groundwater.

Individually, the (Enhanced) Reduced Build Alternative would have minimal impacts on surface water quality, quantity or beneficial uses, and little impact on groundwater quality, quantity or beneficial uses. The SR-22 may have a slight contribution to the on-going trends of increased surface water runoff due to more paved surfaces. Surface water quality is affected by increased development above the groundwater basin; this in turn leads to decreased groundwater recharge due to more impermeable surfaces, and the entire cycle produces a decrease in groundwater quality.

The mitigation included for both the the (Enhanced) Reduced Build and Full Build Alternative restricts impacts to floodplain elevation to below the criterion of 0.3 meter (one foot). The United States Army Corps of Engineers' Santa Ana River Mainstem Project will provide various levels of flood protection ranging from 100-year to 190-year in areas most susceptible to damages from floodflows. The potential floodplain impacts of this project were considered in the floodplain analysis because it will be an "existing" condition, scheduled for construction before the SR-22/WOCC project. Therefore, the SR-22/WOCC project and the Santa Ana River Mainstem Project would not contribute to cumulative impacts to floodplain. There are no other projects in the vicinity that would affect floodplain.

8.2.3 Waters of the United States

Both the (Enhanced) Reduced Build Alternatives and the Full Build would require improvements to structures in waters of the United States. Most of these waters are concrete-lined and do not contain sensitive biological resources. At the Santa Ana River crossings, there are potential, minor impacts from pier modifications. These impacts, however, would not affect habitats and are within the thresholds for nationwide permits. Thus, the SR-22/WOCC project and the projects listed in Table 8.2-1 would not contribute to a cumulative impact on waters of the United States

With the exception of the Santa Ana River Mainstem Project discussed above, the projects listed in Table 8.2-1 Projects Included in Cumulative Analysis (including SR-22/WOCC) would not affect waters of the United States. See discussion above in Section 8.2.2. Section 4.4 of this document discusses impacts to waterways in the project area.

8.2.4 Cultural Resources

Only the Full Build Alternative for the SR-22/WOCC project would affect a cultural resource, the Pacific Electric Santa Ana River Bridge. This historic resource is located within the former right-of-way for the Pacific Electric Railroad, which operated in this corridor from 1904 to 1950. Thus, the removal of the bridge and the use of the vacant right-of-way for the Pacific Electric Arterial under the Full Build Alternative represent a substantial contribution to an historic cumulative impact. Since the only possible mitigation would be to eliminate this right-of-way from the project plans, the (Enhanced) Reduced Build Alternative was adopted to address mobility and safety needs while avoiding impacts to a historic resource. A full discussion of cumulative impacts caused by the Full Build Alternative can be found in the DEIS/EIR of August, 2001.

8.2.5 Communities

The identified Preferred Alternative, the (Enhanced) Reduced Build Alternative, would not disturb Community Cohesion. The (Enhanced) Reduced Build Alternative would displace residences; however, substantial impacts to community cohesion are not expected for the following reasons: The number of displaced dwellings comprises a relatively small proportion of the residences in the affected neighborhoods and the displaced properties are at the periphery or at isolated locations of the neighborhood.

Implementation of the (Enhanced) Reduced Build Alternative would result in the loss of 472 on-site parking spaces at four locations. These impacts would occur in the City of Orange. Substantial parking impacts are anticipated at two of the subject properties.

There would be some benefits derived from the SR-22 WOCC project and the projects listed in Table 8.2-1 (Projects Included in Cumulative Analysis), including greater accessibility and safety. Improving mobility along the SR-22 corridor would improve accessibility for the businesses in the areas that are currently experiencing high traffic volumes, such as the office and retail developments along The City Drive. Other projects listed in Table 8.2-1 could also help improve mobility such as the Seal Beach Boulevard Overcrossing Widening, Bristol Street Corridor Redevelopment Project, Harbor Boulevard Smart Street Improvements and the Katella Avenue Super Street. These projects consist of signalization and intersection and capacity improvements that would ease the traffic volume in the SR-22/WOCC project study area.

The CenterLine Project, another regional scale improvement proposal, would be 18.2 Km (11.4 miles), 16 station (with one possibly extension station) light rail system serving Orange County's central business area between the cities of Santa Ana, Costa Mesa, and Irvine. The project is expected to use modern electric light rail technology and is estimated to be 78 percent elevated and 22 percent at street level. Connections include the John Wayne Airport, Irvine Business Complex, the Santa Ana Civic Center, South Coast Metro retail area, and major employment and cultural centers in the City of Costa Mesa. The CenterLine will also provide critical connections with the Santa Ana Regional Transportation Center, which is a major intermodal connection with Amtrak, and a 435-mile, five county, regional commuter rail system known as Metrolink. The system would have approximately 18 light rail cars operating at peak-hour frequency of one train every ten minutes. Hours of operation and fares would be similar to those for OCTA buses.

Approximately 340,000 jobs and 415,000 residents are located within two miles of the CenterLine alignment. With population densities as high as 12,400 persons per square mile, an amount exceeded only by San Francisco in the western United States, the CenterLine is projected to carry 21,800 riders on opening day, and 31,600 daily riders in 2025. It is anticipated that the Centerline will result in 8,000 daily auto trips removed countywide and 14,000 fewer cars on the road every day, translating into 253,000 fewer daily vehicle miles traveled. Such reductions will provide benefits for both riders and auto users alike with approximately 13.4 million hours of travel time savings on an annual basis including 7.3 million hours for new transit riders. In addition to increasing people movement, reduced emissions, the CenterLine provides opportunities for transit-oriented development, increased transit accessibility and improved access to minority businesses within the corridor while providing for the effective use of limited rights-of-way.

The scope has been modified where the CenterLine project limits are no longer near the project limits of the SR-22/WOCC. Due to the distance between these two projects, SR-22/WOCC would not have cumulative effects to the same resources as the CenterLine project on a local level. If the CenterLine project is built, it could have a beneficial impact on traffic and circulation in the Central Orange County region. The CenterLine project could potentially improve air quality on a regional scale. The Federal Transit Administration and the Orange County Transportation Authority (OCTA) are the lead agencies

and will prepare environmental documentation in accordance with NEPA and CEQA. The CenterLine project is not expected to be built until at least 2010.

Several of the projects in Table 8.2-1 cause residential and business displacements, including the Bristol Street Corridor Redevelopment Project, the Main Street/La Veta Avenue/Chapman Avenue project, and the Harbor Boulevard Smart Street Improvements. Some of these displacements have already occurred and the rest will occur before the displacements of the SR-22/WOCC project. Adequate relocation supplies exist within the corridor cities for the combined relocations of these previous projects and the SR-22/WOCC. Therefore, displacements would result in minimal cumulative impacts. Although the SR-22/WOCC proposed project includes residential and business displacements, community cohesion would not be diminished. These displacements would not substantially affect minority block groups in the study area. See Section 4.6 for discussions of Community Impacts and Environmental Justice.

The Full Build Alternative for the SR-22/WOCC project would remove a small amount of farmland to construct the Pacific Electric Arterial. This farmland is an isolated parcel within an urban area, which is zoned for residential land uses, and is not classified as prime farmland. Although not individually a substantial impact, this incremental loss of farmland would contribute to an historic and ongoing loss of farmland within the county.

8.2.6 Air Quality

The (Enhanced) Reduced Build Alternative for the SR-22/WOCC project conforms with the 2000 Regional Transportation Plan (June, 2001), and would not exceed the pollution thresholds for contaminants. The project is also included in the current Regional Transportation Implementation Program (RTIP). In the current "Final 2002 RTIP (FY 2002/2003-2007/2008)," the mainline elements of the SR-22/WOCC project are included for FY 2003-2008 as Project # ORA000195, on SR-22 (I-405 to SR-55) add 2 HOV lanes/ 1 each direction; and 2 auxiliary lanes/1 each direction (from 0-2) (I-5 to Beach) and operating improvements, as well as ramp improvements on SR-22 in the vicinity of City Drive (Projects #ORA55282 and #ORA990443). Note, SCAG loosely defined the project limits of the mainline from I-405 to SR-55; however, the (Enhanced) Reduced Build Alternative mainline project limits are from Valley View to approximately SR-55. SCAG had analyzed the extension of the (Enhanced) Reduced Build Alternative's eastern terminus as part of the SR-22/55 direct HOV connector feature of the Full Build Alternative, as presented in the August 2001 DEIR/EIS. The slight extension (from Glassell Street to approx SR-55) of the SR-22/WOCC (Enhanced) Reduced Build Alternative's HOV mainline at the eastern terminus has been analyzed as part of the SR-22/55 direct HOV connector component of the Full Build Alternative.

The design of the project has been adopted in the 2002 Regional Transportation Improvement Program (RTIP) and the construction of the project is included with a start date of 2003 and a completion date of 2006 (with the design-build concept implemented). Therefore, the SR-22/WOCC Project is in conformity with the SIP and is consistent with the requirements of the Transportation Conformity Rule.
All intersections studied for microscale impacts are within the applicable state and federal thresholds for carbon monoxide impacts. For the project to contribute to a cumulative impact at the microscale level, the same location (often called a "hot spot") would have to be affected by more than one project. A review of projects listed in Table 8.2-1 did not identify any such locations. Therefore, none of the project alternatives would contribute to a cumulative microscale air quality impact.

8.2.7 Noise

Cumulative impacts to sensitive noise receptor sites relate only to multiple impacts to a single noise-sensitive receptor. Therefore, the boundaries for analysis of noise impacts are limited to the area immediately adjacent to sensitive sites and include other projects that may affect the same resource.

A total of 89 noise-sensitive receivers were analyzed for the SR-22/WOCC. Since traffic noise analyses utilize representative sites and do not analyze every site that would be affected by a given project, there is the possibility that two projects could contribute to a cumulative noise impact at the same location. This would tend to occur where two projects intersect, such as a street widening project and a freeway-

improvement project. Potential for cumulative noise impacts exists at the Seal Beach Overcrossing and the Harbor Boulevard Smart Street Improvements. Mitigation is planned for SR-22 at Harbor Boulevard.

8.2.8 Parks and Recreation

Loss of parkland and recreational resources may be of two types: Direct impact on the resource (actual removal of acreage) and indirect impact (loss of the resource's full usefulness due to noise, visual, air quality or similar impacts). There are no direct impacts on any park in the (Enhanced) Reduced Build Alternative. However, there would be visual impacts to one park, the Pacific Electric Commemorative Area. See Section 4.13 regarding this impact, and Section 9.0 for a full discussion of Section 4(f) of the Transportation Act, which regulates use of parkland for transportation projects.

Cumulative impacts to parks relate primarily to multiple impacts to a single park or recreation resource. In other words, if more than one project would result in noise, visual, air quality or similar impacts to the same park, these combined impacts would be cumulative on that resource. Cumulative impacts may also relate to impacts to a type of park or resource that is unique and serves a more limited public. A single impact to this type of resource could limit its availability to populations beyond the immediate vicinity of the resource. Therefore, the boundaries for analysis of cumulative impacts to parks and recreational facilities include not only the area immediately adjacent to such facilities, but also the larger community served by them.

The Full Build Alternative would preclude a new Class I bicycle trail in the former Pacific Electric right-of-way, as proposed by the City of Santa Ana. This alternative and its impact on the potential Bikeway is fully discussed in the DEIR/EIS of August, 2001.

The other projects listed in Table 8.2-1 would not have an impact on parks and recreation. Therefore, the SR-22/WOCC alternatives and these projects would not result in a cumulative impact.

8.2.9 Visual Quality

The (Enhanced) Reduced Build Alternative would have substantial impacts to the visual environment. The most wide-ranging effect would be the removal of the majority of the landscaping along SR-22. Over the past decades, freeway-widening projects have resulted in the elimination of most or all of the landscaping along most freeways in Orange County until only a few areas have sufficient room for landscaping. However, landscaping and context-sensitive design would be incorporated to mitigate for these impacts where possible. The loss of this linear urban forest would not only be a substantial individual visual impact but would also contribute to a historic trend of eliminating trees on both highways and surface streets.

The Old Bixby Ranch Golf Course project includes development that would remove – and already has removed – a substantial number of large eucalyptus trees. The Katella Avenue Super Street project would also remove (and not replace) trees. In this western portion of the SR-22/WOCC study area, these projects and the SR-22/WOCC would each contribute to a cumulative impact to visual quality.